RESPONSE UNDER 37 CFR § 1.111
Serial Number: 10/743,567
Filing Date: December 22, 2003
Title: SYNCHRONIZING CONTINUOUS SIGNALS AND DISCRETE EVENTS FOR AN IMPLANTABLE MEDICAL DEVICE

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REMARKS

This responds to the Office Action dated January 12, 2006 (hereinafter "the Office Action"). No claims are amended, cancelled, or added. Therefore, claims 1-31 remain pending in this patent application.

§103 Rejection of the Claims

1.   Claims 1-10, 16-23 and 28-31 were rejected under 35 U.S.C. § 103(a) as lacking patentability over Amely-Velez (U.S. Publication No. 2002/0107550) in view of Bocek et al. (U.S. Patent No. 5,578,063, "Bocek"), as applied in the previous Office Action of July 12, 2005, and further in view of Goedeke (U.S. Patent No. 5,904,708). Applicant respectfully traverses the rejection. To establish proper *prima facie* obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations.[1] Also, a claim in dependent form shall be construed to incorporate by reference all elements of the claim to which it refers.[2] Applicant respectfully submits that all elements recited or incorporated in these rejected claims are not taught or suggested in the proposed combination of Amely-Velez, Bocek and Goedeke.

Regarding claims 1-10, and 16-17:

Applicant cannot find in the proposed combination of Amely-Velez, Bocek and Goedeke any disclosure, teaching, or suggestion of, among other things,

> a controller circuit operable to process the sampled values to generate at least one marker to indicate a detected event related to the sensed electrical activity, and wherein the controller circuit is operable to read a clock circuit value as a timestamp representative of absolute time, the timestamp indicating when the detected event occurred, and the controller circuit also operable to store the at least one marker with the timestamp in the event marker buffer of the memory,

as recited in claim 1 and incorporated into claims 2-10 and 16-17.

The present application teaches that absolute time refers to the controller reading and storing a clock circuit value in contrast to a controller calculating a relative time value. In an example embodiment, absolute time is referenced from a system epoch.[3] Amely-Velez

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[1] M.P.E.P. § 2143.
[2] 35 U.S.C. § 112 ¶4.
[3] Patent Application, page 8, lines 1-6.

apparently refers to timing [events] with respect to each other[4] and Bocek apparently refers to markers being aligned in time relation to their respective electrograms and hence to each other.[5] Goedeke apparently refers to a date and time event marker stored with the relative physiologic data set.[6] However, Goedeke's date and time is apparently only to record a time at which the relative physical data set was recorded, and is not a "marker to indicate a detected event related to the sensed electrical activity," as recited in claim 1.

Additionally, as stated in the Final Office Action, the factual inquiries set forth in Graham v. John Deere that are applied to establish a background for determining obviousness under 35 U.S.C. § 103(a) include ascertaining the differences between the prior art and the claims at issue.[7] Ascertaining the difference between the prior art and the claims at issue includes considering a reference in its entirety—including disclosures that teach away from the claimed invention.[8] Goedeke expressly states that an advantage of its invention is that there is no need to make the time comparisons and correlate two sets of data.[9] Therefore, Goedeke actually expressly teaches away from a marker to indicate a detected event related to the sensed electrical activity, and ... to store the at least one marker with the absolute-time timestamp in the event marker buffer of the memory, as recited in claim 1.

Another criterion required to establish *prima facie* obviousness, is that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.[10] References cannot be combined where a reference teaches away from the combination.[11] Because Goedeke teaches away from time-based comparisons of two sets of data, proper motivation is lacking to combine Goedeke with the timing of each cardiac pulse with respect to others in Amely-Velez, or to the markers aligned to each other of Bocek.

Regarding claims 18-23, 28-31:

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[4] Amely-Velez, col. 1 ¶ 0003.
[5] Bocek, col. 10 lines 35-37.
[6] Goedeke, col. 14 lines 2-3.
[7] Final Office Action, pg. 5 ¶6.
[8] M.P.E.P. §2141.02.
[9] Goedeke, col. 19 lines 12-16.
[10] M.P.E.P. § 2143.
[11] M.P.E.P. § 2145(X)(D)(2).

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Applicant cannot find in the proposed combination of Amely-Velez and Bocek any disclosure of, among other things,

> detecting events associated with the electrical activity, storing event markers representing the events in a memory, each event marker including a timestamp of when a corresponding event occurred, the timestamp representative of an absolute time,

as recited in claim 18 and incorporated into claims 19-23, and 28-31.

Rather than absolute time, Amely-Velez apparently refers to timing [events] with respect to each other,[12] and Bocek apparently refers to markers being aligned in time relation to their respective electrograms, and hence to each other.[13] Goedeke apparently refers to a date and time event marker stored with the relative physiologic data set,[14] but this date and time is apparently only to record a time at which the relative physical data set was recorded, and is not a "marker representing events associated with the electrical activity" as recited in claim 18. Additionally, Goedeke expressly teaches away from the use of such markers, as discussed above.[15]

In sum, Applicant respectfully requests reconsideration and allowance of claims 1-10, 16-23 and 28-31.

2.   Claims 11-15 and 24-27 were rejected under 35 U.S.C. § 103(a) as lacking patentability over Amely-Velez (U.S. Publication No. 2002/0107550) in view of Bocek and Owen et al (U.S. Patent No. 6,427,083, "Owen") as applied in the previous Office Action of July 12, 2005, and further in view of Goedeke (U.S. Patent No. 5,904,708) as applied to claims 1-10, 16-23 and 28-31 above. Applicant respectfully traverses the rejection.

Claims 11-15 ultimately depend on base claim 1, and claims 24-27 ultimately depend on base claim 18. As discussed previously, Applicant cannot find any teaching or suggestion of all the elements of the base claims in the proposed combination of Amely-Velez and Bocek. The addition of Owen fails to provide the missing element or elements discussed above. For example, Applicant cannot find in the proposed combination of Amely-Velez with Bocek and Owen any disclosure, teaching, or suggestion of,

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[12] Amely-Velez, col. 1 ¶ 0003.
[13] Bocek, col. 10 lines 35-37.
[14] Goedeke, col. 14 lines 2-3.
[15] Goedeke, col. 19 lines 12-16.

> a controller circuit operable to process the sampled values to generate at least one
> marker to indicate a detected event related to the sensed electrical activity, and
> wherein the controller circuit is operable to read a clock circuit value as a
> timestamp representative of absolute time, the timestamp indicating when the
> detected event occurred, and the controller circuit also operable to store the at
> least one marker with the timestamp in the event marker buffer of the memory,

as recited in claim 1 or,

> detecting events associated with the electrical activity, storing event markers
> representing the events in a memory, each event marker including a timestamp of
> when a corresponding event occurred, the timestamp representative of an absolute
> time,

as recited in claim 18.

Additionally, Applicant cannot find in the proposed combination of references any

teaching or suggestion of amplitude compression as recited in claims 12 and 25, and Huffman

encoding as recited in claims 14 and 26. Further, Applicant cannot find in the proposed

combination of references any teaching or suggestion of reducing the sampling rate to compress

data as recited in claims 13 and 27. By reducing the sampling rate, accuracy from the additional

is lost. Because Owen states that compression techniques that result in lossless compression are

preferred,[16] Owen actually expressly teaches away from reducing the sampling rate to compress

data as recited in claims 13 and 27.

In sum, Applicant respectfully requests reconsideration and allowance of claims 11-15

and 24-27.

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[16] Owen, col. 22 lines 47 and 48.

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2172 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this _10_ day of April, 2006.

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